

Remarks/Arguments

A. Claims In The Case

Claims 131-194 are pending. Claim 131 has been amended for correction of a typographical error.

B. The Claims Are Not Obvious Over Pohndorf In View Of Grahl Pursuant To 35 U.S.C. § 103(a)

The Office Action rejected claims 131-194 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,904,683 to Pohndorf et al. (hereinafter “Pohndorf”) in view of U.S. Patent No. 4,124,235 to Grahl et al. (hereinafter “Grahl”). Applicant respectfully submits that (a) Grahl is not relevant prior art since it is not directed to bone stabilization systems and/or methods, (b) there is no motivation to modify or combine Pohndorf and Grahl, and (c) even if Grahl were relevant prior art (and it is not), and even if Pohndorf and Grahl were modified or combined in light of each other (and they should not be), claims 131-194 are still not obvious in light of Pohndorf and Grahl because such prior art does not teach or suggest the combination of features in Applicant’s claims.

To establish a prima facie case of obviousness, there must be some motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. (MPEP 2143). “In order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the invention was concerned.” In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

The Office Action stated: “With respect to claims 131 and 149, Pohndorf et al disclose a plate (10) an opening (22,24,26,28,30) through the plate, a ring (44) positionable within the opening the ring, and a fastener (38) positionable through the ring, the fastener configured to couple the plate to bone.” As acknowledged in the Office Action, however, Pohndorf did not teach the combination of features in Applicant’s claims. Pohndorf does not teach, by way of nonlimiting example, a ring comprising a plurality of paddles, wherein the paddles of the ring are configured to move outward to allow a portion of the fastener to be positioned in the opening, and wherein the paddles are configured to move inwards after insertion of a portion of the fastener to inhibit removal of the fastener from the plate.

The Office Action attempts to remedy the deficiencies of Pohndorf by citing Grahl. The Office Action alleges that Grahl “evidences the use of a ring having paddles that deformed so as to allow a fastener in and deformed so as to prevent withdrawal of the fastener.” Applicant respectfully disagrees with the allegations set forth in the Office Action.

First, Grahl is nonrelevant prior art. Grahl does not teach or suggest any systems or methods relating to bone stabilization methods or systems. Instead, Grahl merely relates to couplings for joining two separate tubes together. Grahl teaches various embodiments of a tube coupling or union that are used for industrial applications. Grahl states at column 1, lines 7-10: “Couplings for flareless tubes,..., which include a deformable metal sleeve between a nut and body having threaded engagement with each other, have many uses in industry.”

Second, Applicant respectfully submits that there does not appear to be any teaching or suggestion that the tube coupling device of Grahl could be used for coupling of a fastener to a plate in a bone stabilization system or method. There appears to be no motivation for a person having ordinary skill in the art to look to the industrial application of Grahl, which is related to joining two separate tubes together, when looking at the problem of inhibiting separation of a fastener from a plate for bone stabilization methods or systems. Stated another way, a person of ordinary skill in the art, when reviewing Pohndorf (which relates to an “anterior cervical

vertebral stabilizing device”) would not be motivated to look at Grahl (which relates to “tube couplings” for industry) to combine with Pohndorf. There is no teaching or suggestion in Grahl, for example, that the tube couplings taught in Grahl could be used for, or combined with, any type of surgical application, implant, or bone stabilization system or method. Similarly, there is no teaching or suggestion in Pohndorf that the vertebral stabilization devices taught therein would have any use for, or combination with, industrial tube couplings.

Indeed, only with the use of impermissible hindsight can Grahl be combined with Pohndorf to render Applicant’s claims obvious. Because the industrial “tube coupling” teachings in Grahl are so far removed from that of Applicant’s field of endeavor (i.e., bone stabilization methods and systems), Grahl must be considered to be nonrelevant art outside the scope of Applicant’s field of endeavor, and thus Grahl should not be combined with Pohndorf to remedy the deficiencies of Pohndorf. Moreover, because there is no teaching or suggestion to combine Grahl with Pohndorf, or vice versa, then Grahl cannot be combined with Pohndorf to remedy the deficiencies of Pohndorf.

In addition, even if Grahl were relevant prior art (and it is not), and even if Grahl could be properly combined with Pohndorf (and it should not be), Grahl does not appear to teach or suggest paddles that are configured to move inwards after insertion of a portion of the fastener to inhibit removal of the fastener (or the tube in the case of Grahl). Grahl appears to teach or suggest paddles that expand upon insertion of the tube so that friction between the paddles and the tube hold the tube until the threaded connection is locked in place. Grahl does not appear to teach or suggest that the paddles are configured to move inwards after insertion of a portion of the tube to inhibit removal of the tube. Further, Grahl does not disclose or suggest “deflectable portions of the ring are configured to deflect outwards to allow a portion of the fastener to be positioned in the opening, and wherein the deflectable portions are configured to deflect inwards such that removal of the fastener from the plate is inhibited during use” as recited in claim 149. Also, Grahl fails to disclose or suggest fingers of a ring that are “configured to engage a portion

of the head of the fastener to inhibit removal of the fastener from the plate during use” as recited in claim 167.

Based on the above, Applicant does not believe that the Office Action has established a prima facie case of obviousness. Applicant respectfully requests removal of the obviousness rejections of claims 131-194.

In addition, Applicant believes that the many of the features of the independent claims and the dependent claims are not taught or suggested by the combination of the cited art.

Claim 137 recites in part: “wherein the fastener comprises a groove to engage the paddles of the ring.” Claim 138 recites in part: “wherein the groove comprises a rim formed along an edge of the fastener.” Claim 155 recites in part: “wherein the fastener comprises a groove to engage the deflectable portions of the ring.” Claim 156 recites in part: “wherein the groove comprises a rim formed along an edge of the fastener.” Claim 171 recites in part: “wherein the portion of the head of the fastener comprises a groove.” Claim 172 recites in part: “wherein the groove comprises a rim formed along an edge of the fastener head.” Applicant submits that the combination of the cited art does not appear to teach or suggest at least the above-quoted features of claims 137, 138, 155, 156, 171, and 172, in combination with other features of the claims.

Claims 140 and 158 recite in part: “wherein a diameter of a portion of the head is greater than a diameter of an inner surface of the ring such that the head exerts an expanding force on the ring when positioned in the ring.” Claim 174 recites in part: “wherein a diameter of the head is greater than a diameter of an inner surface of the ring such that the head exerts an expanding force on the ring when positioned in the ring.” Applicant submits that the combination of the cited art does appear to teach or suggest at least the above-quoted features of claims 141, 158, and 174, in combination with other features of the claims.

Claim 141 recites in part: “wherein the paddles of the ring comprise ridges that are configured to engage a surface of the fastener.” Claim 157 recites in part: “wherein the deflectable portions of the ring comprise ridges, and wherein the ridges extend into a groove in the fastener.” Claim 159 recites in part: “wherein the deflectable portions of the ring comprise ridges that are configured to engage a top surface of the head of the fastener.” Claim 173 recites in part: “wherein the upper portion of the ring further comprises a ridge, and wherein the ridge extends into a groove in the head of the fastener.” Claim 178 recites in part: “wherein the upper portion of the ring further comprises a ridge that is configured to engage a top surface of the head of the fastener to limit an insertion depth of the fastener.” Applicant submits that the combination of the cited art does not appear to teach or suggest at least the above-quoted features of claims 141, 157, 159, 173, and 178, in combination with other features of the claims.

Claims 143, 161, and 176 recite in part: “wherein the ring further comprises a gap to allow the ring to expand and contract.” Claims 144, 162, and 177 recite in part: “wherein contracting the gap of the ring allows insertion of the ring into the opening of the plate.” Applicant submits that the combination of the cited art does not appear to teach or suggest at least the above-quoted features of claims 143, 161, and 176, in combination with other features of the claims.

Claims 145, 163, 179, 185, and 191 recite in part: “wherein the ring is configured to move within the opening of the plate to allow a shank of the fastener to be inserted into bone at an oblique angle to the plate.” Applicant submits that the combination of the cited art does not appear to teach or suggest at least the above-quoted features of claims 145, 163, 179, 185, and 191, in combination with other features of the claims.

Claims 147, 165, and 181 recite in part: “a second fastener positioned through a second ring positioned within a second opening in the plate such that the two fasteners extend through the plate in diverging directions relative to each other.” Claims 187 and 193 recite in part:


“further comprising inserting a second fastener through a second ring positioned within a second opening in the plate such that the two fasteners extend through the plate in diverging directions relative to each other.” Claims 148, 166, and 182 recite in part: “a second fastener positioned through a second ring positioned within a second opening in the plate such that the two fasteners extend through the plate in converging directions relative to each other.” Claims 188 and 194 recite in part: “further comprising inserting a second fastener through a second ring positioned within a second opening in the plate such that the two fasteners extend through the plate in converging directions relative to each other.” Applicant submits that the combination of the cited art does not appear to teach or suggest at least the above-quoted features of claims 147, 148, 165, 166, 181, 182, 187, 188, 193, and 194, in combination with other features of the claims.

C. Additional Remarks

Applicant submits that all claims are in condition for allowance. Favorable consideration is respectfully requested.

Respectfully submitted,
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